

THREE NEWLY RECORDED NATURALIZED PLANTS OF TAIWAN—*MOLLUGO VERTICILLATA*, *FESTUCA* *ELATIOR* AND *BROMUS RIGIDUS*.

CHEN-MENG KUO*

1. *Mollugo verticillata* L. Sp. Pl. 89. 1753; Britton & Brown, Ill. Fl. North. U.S. Canada Brit. Poss. 2: 35. 1913; Tutin et al. Fl. Eur. 113. 1964; Ohwi, Fl. Jap. 421. 1965; Correll & Correll, Aquat. Wetl. Pl. Southw. U.S. 2: 872. 1975.

Fig. 1. 光葉粟米草 (擬)

Specimen** examined: Yunlin Co.: Huwei, Sanholi (三合里), W. G. Chou s. n. Oct. 1, 1978, on sandy peanut field.

A weed originally from tropical America, its striking features are plant body glabrous throughout except for peduncles and sepals where only a few rod-like glands are present, flowers stalked, fasciculate, and upper leaves linear, not spatulate, the following is a key to the Taiwan species of *Mollugo*:

1. Flowers cymose; lower leaves linear-oblong, broadest at middle.....*M. pentaphylla* 2
 1. Flowers fasciculate; lower leaves spatulate, broadest near apex.....*M. lotoides* 2
 2. Flowers almost sessile; plant body densely stellate hairy.....*M. lotoides* 3
 2. Flowers long-stalked; plant body glabrous or bearing simple hairs.....*M. lotoides* 3
 3. Upper leaves spatulate; branches hairy.....*M. oppositifolia* 3
 3. Upper leaves linear; branches glabrous.....*M. verticillata*
2. *Festuca elatior* L. Sp. Pl. 75. 1753; Britton & Brown, Ill. Fl. North. U.S. Canada Brit. Poss. 1: 272. 1913; Deam, Grass. Indiana 52. 1929; Hitchcock, Man. Grass. U.S. 67. 1950; Kitamura, Murata & Koyama, Col. Ill. Herb. Pl. Jap. 3: 318. fig. 585. 1964; Ohwi, Fl. Jap. 160. 1965; Osada, Ill. Jap. Al. Pl. 219. pl. 442. 1972.

Fig. 2. 歐洲羊茅 (擬)

Specimens** examined: (1) Miaoli Co.: Sishishan, C. M. Kuo 8534, May 24, 1977, road side, gravel mt. slope, open, 2,500 m. (2) Taichung Co.: Anmashan 210 Line 16K, C. M. Kuo 9665, April 7, 1978, open grass field, road side, 2,000 m.

A native grass of Eurasia, naturalized throughout temperate regions of the Northern Hemisphere, usually cultivated for pasture and hay.

The plant is distinct by its taller size (1-1.2 m tall), lower glumes (3 mm) about half the length of upper glumes (5 mm) and both glumes having an obtuse apex but never acuminate.

3. *Bromus rigidus* Roth, Mag. Bot. Roem. Ust. 10: 21. 1790; Fernald, Gray's Man. Bot. 103. 1950; Hitchcock, Man. Grass. U.S. 52. fig. 36. 1950; Steward, Man. Vasc. Pl. Lower Yangtze Vall. China 447. 1958; Chase & Niles, Ind. Grass Sp. 407. 1962; Kitamura, Murata & Koyama, Col. Ill. Herb. Pl. Jap. 3: 310. fig. 561. 1964; Ohwi, Fl. Jap. 157. 1965; Keng, Fl. Ill. Pl. Prim. Sin. Gram. 275. fig. 223. 1965; Osada, Ill. Jap. Al. Pl. 208. pl. 442. 1972.

Fig. 3. 硬雀麥 (Keng 1965)

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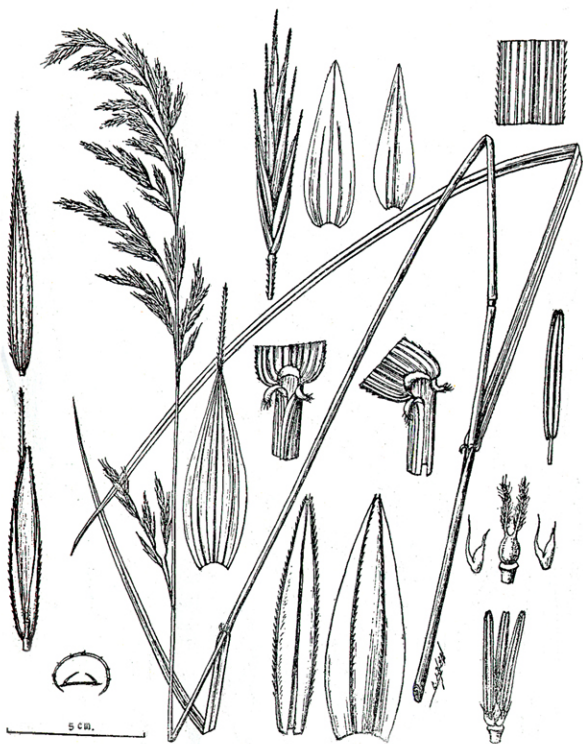
Specimen** examined: Taichung Co.: Anmasan 43K, C.M. Kuo 9611, April 5, 1978, waste land, 2,100 m.

A grass originally from Europe, easily recognized by having a lemma with a very long awn (3-4 cm in length), other species formerly known from Taiwan bearing short awn (not more than 1 cm).

ACKNOWLEDGEMENTS

The author wishes to express his gratitude to Mr. W. G. Chou (周文集), Y. F. Chen (陳玉峯) and M. T. Kao (高木村) for sending him the specimen of *Mollugo verticillata*.

Fig. 1. *Mollugo verticillata* L.

Fig. 2. *Festuca elatior* L.

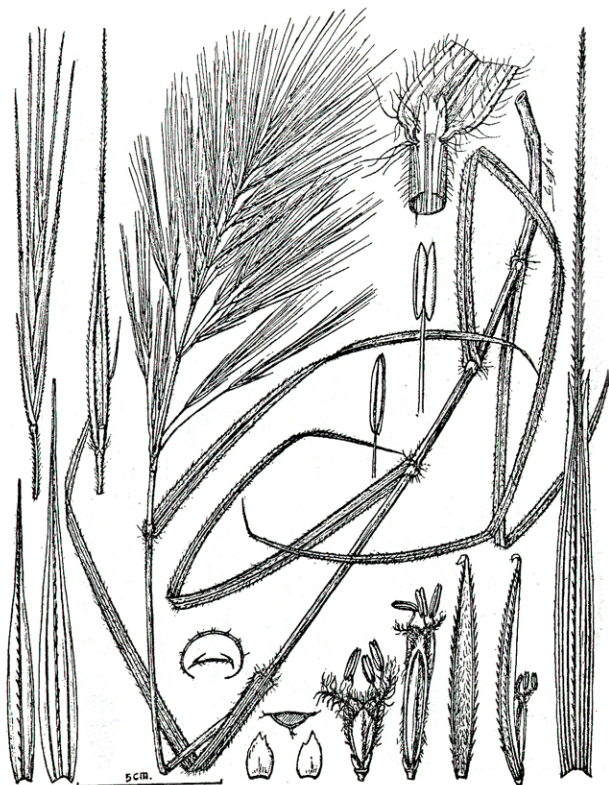


Fig. 3. *Bromus rigidus* Roth